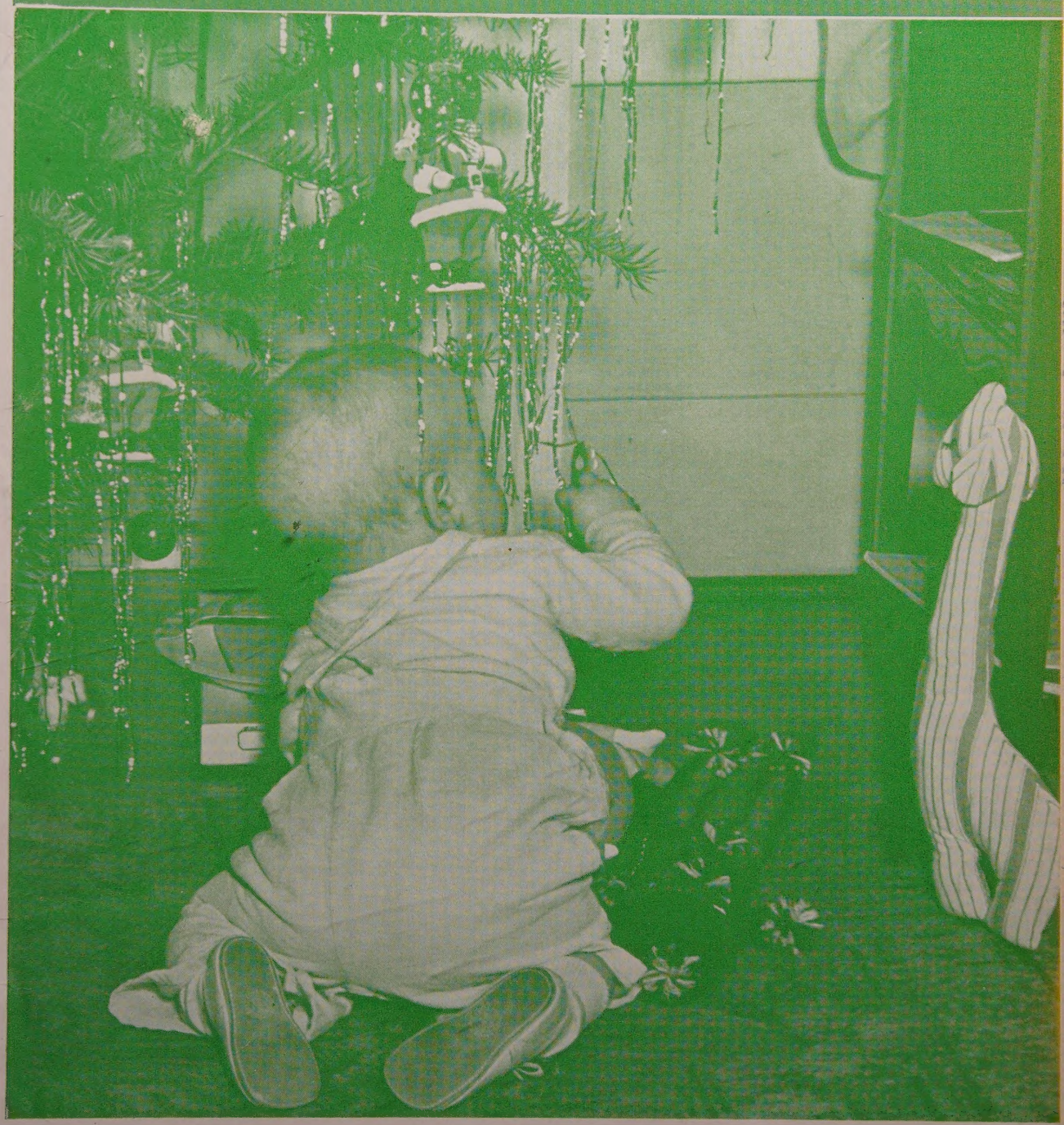
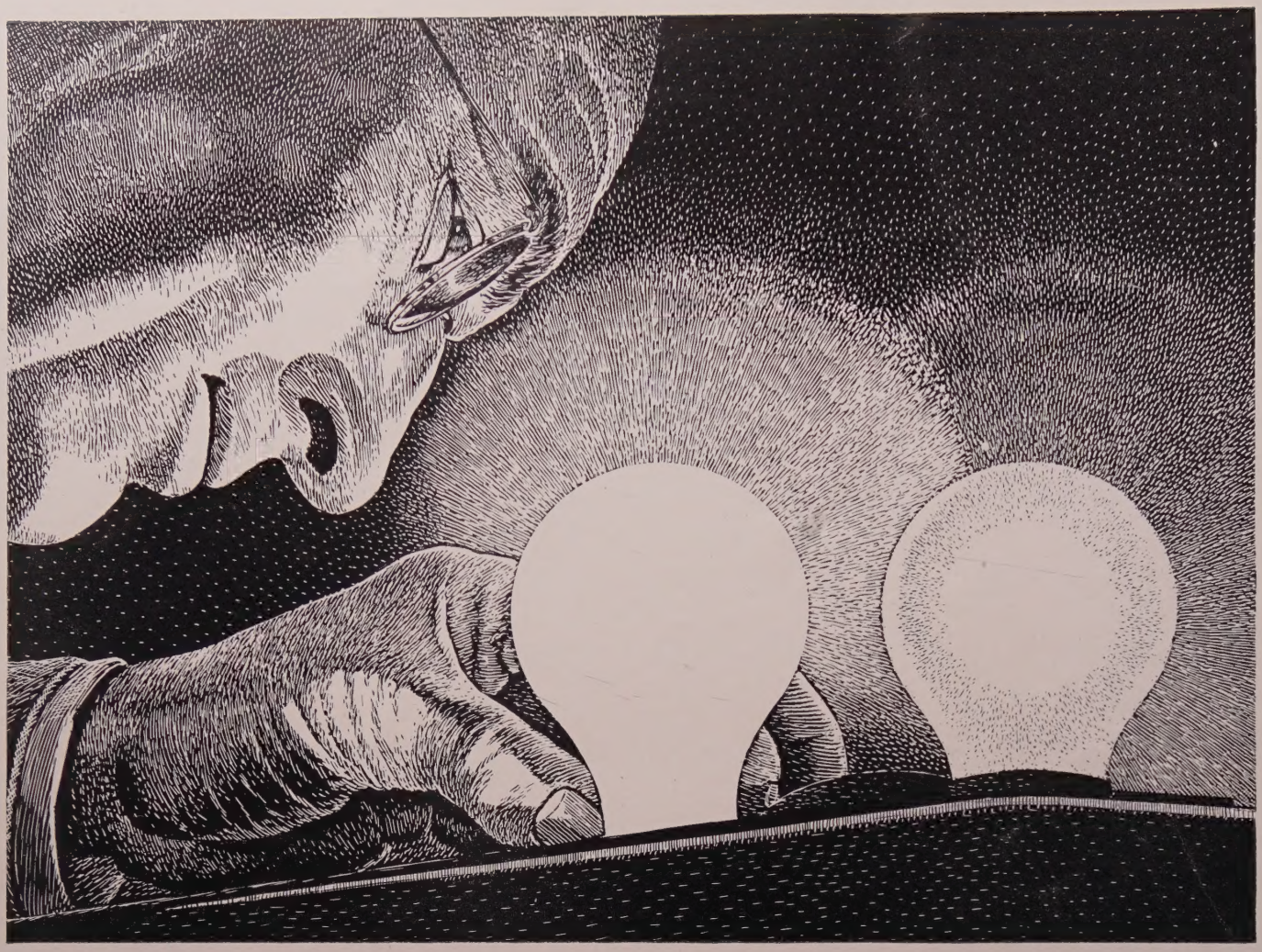
ILLINOIS AGRICULTURIST



Fifty-Fourth Year DECEMBER, 1949 Member of A.C.M.A.



The lamp that's bright all over—*an inside story . . .*

You could look directly through the clear glass of Edison's first lamp and see the hot filament. While this may have been interesting, the glare made it unpleasant. Many attempts were made to diffuse the light and cut the glare by coating or frosting the bulb, without loss of too much light.

But during years of work on many varied lighting projects, Pipkin kept up the search for a still better coating. He has found it—a new silica finish that diffuses the light almost perfectly and gives softer, more beautiful illumination. It is used in the G-E Deluxe-White Lamp now on the market —the lamp that's bright all over.

A General Electric lamp researcher named Marvin Pipkin was the first to offer a practical inside frosting for lamps, with little light loss. His method, perfected in 1925, was a milestone in lamp research. The G-E inside frosted incandescent lamp is still today the one most commonly used.

This new success of Marvin Pipkin, called the most outstanding improvement in filament lamps since his earlier discovery, has come only after thousands of experiments and years of investigation. It illustrates again how General Electric emphasizes research and creative thinking, encourages fertile minds to follow their own imaginative bent, and so stays in the forefront of scientific and engineering development.

You can put your confidence in—

GENERAL ELECTRIC

FACING the FUTURE ... UNAFRAID

OUR ATOMIC AGE gives some folks nightmares that linger long after dawn. Many look to the future with doubt, despondency, and despair.

Farmers read the fear-filled headlines, too —after they have looked at the weather report. They have a big stake in our tomorrow, but they never forget today's job—setting a good table for both rural and urban Americans.

Modern John Deere Power Equipment makes it easier for farmers to raise bumper crops and produce the mountains of meat needed to provide an adequate, well-balanced diet for our people. This abundance of food not only helps to safeguard the nation's health, but nurtures happiness and contentment.

Because of their faith in the land, in themselves, and in divine providence, farmers—who seem to take for granted that each new year will be better than the last—set a shining example for us all. They face the future hopefully—unafraid!

JOHN DEERE

MOLINE • ILLINOIS

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In This Issue . . .

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OUR PLATFORM

To acquaint students and faculty in the College of Agriculture, agricultural leaders, and the rural people of Illinois with the latest scientific developments in agriculture and home economics.

To report events of general interest on the College of Agriculture campus.

To serve as a means of training agricultural and home economics students in journalism and business administration.

To promote the best interests of agricultural and home economics students on the campus of the University of Illinois.

Going Forward . . .

Between now and the new year there comes a softness, a glow in people's hearts which comes automatically as a part of the Christmas season. People shout "Merry Christmas" and send greeting cards to their friends. Gifts are exchanged. Everyone is in a merry mood. But I wonder in this modern day and age if we are always conscious of the fact that the first Christmas brought the greatest gift of all.

Just how are we "moderns" going forward with the teachings of peace on earth, good will toward men?

Might reigns supreme among conflicting world states. Aside from generosity that comes with the Christmas season, greed still blights the hearts of some men. Strikes continue. Self-interest groups and individuals try to get the upper hand; this is not constructive initiative.

Being inherently interested in and connected with agriculture we have a challenging obligation to fulfill. One of the most important factors in a country's welfare is food. In the past, agricultural commodities not only provided nourishment, but have been the basis for the farmer's buying and bargaining power. This situation still exists. But food now has political significance as well.

Yesterday, simple regulators, supply and demand, felt few outside influencing pressures. Artificialities now exist in many instances. We are living in a time of bureaucracy whether we like it or not. Governmental spendings for the fiscal year 1949-1950 are estimated to be a third more than the total cash receipts for all the produce of America's 6,000,000 farms in 1948.

Is that what makes our living standard higher than any other nation's? I am not leading up to political advocation of governmental spending. I was interested in these figures and wanted to pass them along to you.

This summer I heard a speaker say, "No other generation ever had as much power to make a good world to live in, and no other was faced with such an appalling situation if it failed." He was speaking of our generation, the one that you and I represent! Think about that awhile.

Let's tie this all down to my starting theme. We can see the light through His teachings such as the Golden Rule, the Sermon on the Mount, and the Proverbs that He has revealed. These teachings come to mind more vividly at Christmas time, and should be the constant guiding motives of man. Then this world which is trying so desperately to keep on an even keel would travel a long, long way in disposing of the hate, the wars, and the greed that now grips mankind.

And so amidst our season of gay decorations, tin whistles and bells, our feasts of roast turkey and dressing, and all that has grown through these nineteen-hundred and forty-nine years, let us keep foremost in our minds that Christmas, the first Christmas, brought the greatest gift of all.

Glory to God in the highest, and on
earth peace, good will toward men.

OUR COVER: Thomas Wood Casler, son of Mr. and Mrs. Wilford Casler of Rockford, Illinois, looks to see if the tinsel on his first Christmas tree is really tinsel. Miss Helen Zwolanek, instructor of home economics here at the University took the picture.

On June 18, R. R. Hudelson, associate dean of the college of agriculture, left the campus on an assignment for the Office of Military Government in Western Germany. Dean Hudelson is a leader in the field of agricultural economics, and it is an honor to be chosen for this assignment.

In the following story Dean Hudelson relates the problems which currently face German agriculture and gives us a better understanding of their post-war problems.

Dean Hudelson Describes

German Agriculture of Today

It was only on arrival in Frankfurt, Germany, which was the headquarters for the Office of Military Government, that I actually learned what I was to do. My assignment was to study the organization and program for agricultural research and extension in Western Germany with major concentration on the state of Hesse. Later assignments took me to Nieder-Sachsen in Northern Germany and to the southern tip of Bavaria near the Austrian and Swiss borders. Headquarters for the study were established at Wiesbaden, state capital for Hesse. During the entire study I was furnished a car and German driver and nearly all of the time I was accompanied by Dr. P. Piekenbrocki, as interpreter and German consultant.

German Agriculture Is Different

Germany has long been a food-deficit country and Western Germany now has twenty-five percent more people than before the war. These people are largely German nationals who were formerly resident in Eastern Germany. In addition much of the best agricultural land in pre-war Germany is in the Russian sector and this source of food supply is unavailable to Western Germany. Because the border is carefully policed, very little food crosses the line. Eastern German agricultural products are deflected to the East for Russia and her satellites.

In addition to putting greater pressure on the limited food supplies of Western Germany, the increased population creates an almost impossible problem in the way of housing. German commercial and industrial cities have been destroyed so extensively that one wonders where all the people live. Scarcely a single city which had important commercial or industrial enterprises was left standing; the rate of destruction tends to run between seventy-five and ninety percent.

Seed and fertilizer supplies that were disrupted by the war are being rapidly replaced from new sources. Seed potatoes and sugar beet seed are now being produced extensively in the northern part of Western Germany. Fertilizers have returned to about seventy-five percent of their pre-war volume. All phosphate fertilizers must be imported except for basic slag, a by-product of the iron industry. The largest German potash mines are in Russian Germany, but small mines in Western Germany are supplying domestic needs.

Good Crop Yields

The best thing that can be said for German agriculture today is that crop yields are generally good—in most cases higher than we produce in the better parts of the United States. The high yields are produced by prodigious use of human labor, good seeds, scrupulous care of all natural manures, and heavy use of fertilizer. The soils are not naturally strong but are responsive, and the yields reflect well-established custom rather than new research.

Nearly everyone who visits Germany is struck with the meticulous care given to waste materials, particularly to all manures. Since the small strips are unfenced and have no buildings on them, all crop materials are hauled into the villages and there used principally to feed or bed stabled livestock. Later the liquid portion of the manure, which has been drained into cisterns, is placed in tanks or barrels and hauled back to the strips on cow-drawn wagons. And the solid manure is carefully composted beside the house and stables which are under one roof.

The animal industries of Germany are not at all efficient when compared with our own animal enterprises. The production per cow is extremely low, partially because the German cows are also used as draft animals. For this reason many of the cows are bred as much for their quick step and ability as draft animals as for milk production. Another explanation is that sixty per cent or more of the cows have TB. Germany also has a high incidence of brucellosis and mastitis. There is no beef cattle industry, since Germany needs her pastures and forage crops for dairy cattle rather than for beef. The beef and veal produced is almost entirely a by-product of the dairy industry which renders a three-way service of power, milk, and meat. The swine industry is relatively small and probably should remain so because there is no surplus of grain and other concentrates. Swine are normally fed on wastes and surplus potatoes. The poultry enterprise, consisting principally of chickens, is largely a by-product operation based on wastes which the chickens pick up around the village. The production per hen is very low.

Horticulture Crops Vary

Horticultural crops of Germany are varied in their relative efficiency. It is true that along the Rhine and some of the other rivers grape production has been developed to a very high order. Wine production is the principal use of these grapes. Apple trees are seen everywhere. Most of the highways have rows of apple trees along either side; these are cared for by the road commissioners. The small fields frequently have other crops growing beneath apple trees. There are large numbers of vegetable gardens both in the rural areas and in the fringe of the cities. On the whole, however, one receives the impression that horticultural crops are not as efficiently handled as the field crops. Wheat, rye, oats, barley, rape seed—the principal oil crop, and potatoes and sugar beets—the cultivated crops—constitute the principal field crops.

Strip Farming Creates Handicap

The greatest handicap of agriculture in Western Germany is the prevalence of strip farming. The strips are the result of an old form of inheritance whereby each piece of land was divided among children of the family. The typical German peasant family has found that life often depends upon the possession of land on which food can be raised. The family consumes most of the food crop from one of these small farms but limited amounts of cash crops are sold or bartered on the black market.

The strips need to be consolidated into economic units so a family can really make a satisfactory living. Progress in the direction of consolidating the land is extremely slow. Although there is a law which favors land consolidation, it works by public purchase of strips, and few German families are willing to sell or exchange their land. To add to the problem, repeated money inflations have destroyed the small farmer's confidence in money and he prefers to trade for goods that he can use.

The families live in villages and cultivate small strips of land located in various directions away from the village. It is common for a family to have ten, fifteen, or twenty small strips of land varying in size from a fraction of an acre to four or five acres. (It is estimated that one-fourth to one-third of their time is spent in traveling between the villages and the strips.) Eighty-eight percent of all the farms in Western Germany are less than fifty acres in size and the typical ownership is twenty to twenty-five acres. Small borders or ridges divide the strips of land. Although a waste of land, these are necessary so the workers can know where the strip stops and another begins. Not everyone has a road leading to his land, but there is an extensive number of them. Many farmers have to cross the land of someone else; this can be done only when the other strips are in condition to be crossed.

A different condition is seen in the northern part of Nieder-Sachsen and in southern Bavaria. In these areas, the farms are larger and the farmers live on the land. In Northern Germany, much of the land is very sandy and was not used for harvested crops until commercial fertilizers made crop production possible. Heavy fertilization is used to support the growth of small grain, potatoes, and sugar beets. In southern Bavaria, farming is largely based on pasture with Brown Swiss cows as the principal livestock. The major product is cheese, and very good cheese it is!

During the summer, it was very common to see women and children hoeing sugar beets or potatoes, and when the small grain harvest began, swinging the scythe or binding the grain by hand. Few able-bodied men were seen in the fields and on inquiry I was told that most of the farmers have jobs in the small factories in the villages or towns. Actual surveys of labor use indicates that women and children do most of the farming in the central part of Western Germany.

Need Different Education

Young people from German farm families do not have the opportunities which the children of farm families in this country enjoy. As a general rule their formal education is different from the well-to-do urban population. Many of the children of the small farm families stop going to school at age fourteen and become practically full-time workers. In many cases they are expected to attend school once a week during an additional period of two to three years, but this is more or less incidental to their work on the farm. There is little chance for them to go to high school or college. One of the greatest needs of Germany today is a democracy and universal type

(Please turn to page 11)

Typical scene from Germany. The picture to the left shows the characteristic strips of cultivated land, with a village located in the background. The picture to the right is a common sight in Germany where cattle are used in the fields for power.

How Do You Select Your Christmas Cards?

By Verla Jean Smith

Do you find yourself sending a Christmas card to someone just because you received one from them? In doing it, we forget to choose a card for the individual, and we pay little attention to the design or color.

Christmas cards were originated to be sent as a cheerful greeting and a token of remembrance. We can fulfill this purpose only by the selection of a design and color which suits the personality of the friend we greet.

Subject matter does not make a card good or poor. It is the interpretation of this subject matter which counts. Design and color determine whether the interpretation is interesting or trite.

Design is the medium we have for expressing imagination. A design attempting to show every leaf on a tree or every vein in a flower is usually a poor imitation. How much better a camera can show the true beauty of nature! A good designer alters a natural form to suit the shape and materials used, and calls it a conventionalized or stylized design.

Colors give emphasis to a design. The conventional red and green are usually favored. But why not use other colors and pastels for more individuality and interest?

We should never lose sight of the fact that the card should be gay, cheerful, and carry the spirit of Christmas. Yet, it must express individual greeting to the receiver.

Compare each pair of Christmas cards. The angels, the Christmas trees, the houses, and the horse and buggy scene. Which do you prefer? The cards on the right in each pair are conventionalized in design.

☆ ☆

The Day After . . .

'Tis the day after Christmas
And inside and out,
The holiday Carnage
Lies scattered about.

And ma with a wet towel
Atop of her head
And aspirin tablets
Has crawled into bed.

While pa, like a schoolboy
Forgetting his years
Is all tangled up
In the bicycle gears.

With toothaches from candy
And headaches from bills,
They call up the doctor
And order more pills.

Meet Our New . . .
Staff Members

Miss Alberta Reitze, new child development instructor, graduated from Ohio Wesleyan in English literature with full intention to write. Soon after that her interests rested on child development, and ever since she has either taught or studied how 'children really are.'

From the position of an assistant in the kindergarten of Topeka, Kansas, her home town, she advanced to the directorship of two of the kindergartens.

With the desire for more child development training, Miss Reitze entered Kansas State University receiving her master's degree in child development in the school of home economics. While there she became a member of Omicron Nu.

Last year at Milwaukee State teachers college she taught methods of teaching the pre-school child. And now, she is teaching child development here at University of Illinois.

Some Forty-niners

Two new assistants have been added to the staff, too. You might see them any morning in the playground south of Bevier hall with the 16 pre-school children who are observed by child development classes.

One of the new assistants, Mary McPherson Hostetter, is a '49 graduate of the University in child development. She's a member of Omicron Nu and Phi Upsilon Omicron. Her husband, Ross, is an agriculture senior here at Illinois. Their home is in Mt. Carroll, Illinois.

Barbarea Hill Rogers, the other assistant, is a '49 graduate of Berea College, Berea, Kentucky, but she is from Flat Rock, North Carolina. Though her major was vocational home economics she worked in the kindergarten in Berea for two years while she was in school. Her husband, French, is in graduate school working on his master's degree in geology. Their home will be in Speedwell, Tennessee.

From Wisconsin

Miss Claire M. O'Konski is the new assistant extension editor of home ec in 330 Mumford hall this year. She graduated in June from the University of Wisconsin and just can't get used to the flat campus here! Miss O'Konski's major was home ec journalism and she was home ec editor for two semesters of the Wisconsin Country Magazine which corresponds to the Illinois Agriculturist. She also served as home editor of the Dairyland News while she was a senior. Miss O'Konski is replacing Miss Joan Miller who resigned in June to do graduate work at Cornell.

CLASS DOZERS . . . TAKE NOTICE

Choose your lunch wisely. Fats and proteins produce more drousiness than starches and sugars.

By Betty Braden

Do you feel the urge to sleep through classes—and wish you didn't? Sleeping in class may be the result of the food you eat, according to Miss Harriet Barto, associate professor of dietetics at the University.

Miss Barto explained, before a meeting of the dietetics class, how drowsiness in the classroom might be the result of careless planning in the dining room.

The character of the noon meal may be responsible for afternoon sluggishness. Foods which are rich in fats and proteins take longer to digest than those which are mostly carbohydrates, such as starches and sugars. Therefore a lunch containing greasy fried foods and fat meat is likely to make you sleepy.

Food habits also affect alertness. Going without breakfast is a poor policy. After having no food overnite, the body needs energy because of the long interval between meals to fight fatigue. In fact, according to Miss Barto, even three meals a day may not be the best distribution of the day's food for everyone.

Light Snack Relieve Fatigue

Experiments have shown that a properly chosen light snack relieves fatigue. The highest output of a test group of industrial workers was achieved when the workers ate three meals a day and had a mid-morning and a mid-afternoon snack. The best kind of snack contained about an ounce of carbohydrate. This amount would be supplied by about four graham crackers, one and one-half cups of milk, one cup of sweetened orange juice, bar of milk chocolate, malted milk, or a milk-shake.

Food habits can also help you get a restful night's sleep. The recipe is to eat a bedtime snack of the proper foods in small amounts.

This before-bed snack should consist largely of carbohydrate, and be low in fat and moderate in protein content.

Experiments by Laird, psychologist at Colgate University, showed that a snack of three-fourths cup of fresh, crisp cornflakes and one cup milk aided sound sleep.

After the lunch of cornflakes, a fat poor, carbohydrate rich, dry food, there were 6 percent less movements than when there was no bedtime snack.

After a "hard to digest" snack, such as an onion sandwich, a piece of three-layer chocolate cake, or a grilled cheese sandwich, there were 6 percent more movements during sleep that night than when there was no lunch at all.

You can eat not only for the pleasure of eating but for a real purpose—whether it be to stay awake or to go to sleep.

The Ec in Home Ec

By Darlene Guderjan

"This semester I'll take costume design, food economics and meals management, and maybe family housing. Then next semester I can get pattern making and advanced foods." Thus many a home ec major plans her curriculum to fulfill requirements for a degree.

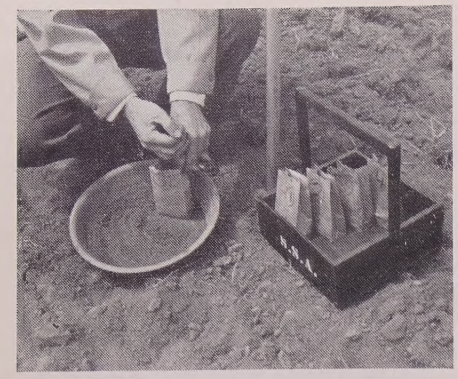
But to understand the internal economic order of the home and family, a home ec major or any major should know the relationship of the home to the national economic order.

Economic problems of the family (economics 380) is a means of answering this need. This course includes the consideration of family income and expenditure, market selection, family standards of consumption and the purchasing power of the dollar. Government actions which increase the adequacy and security of family income such as compulsory health insurance and socialized medicine are also discussed.

Studied in Canada, England, too

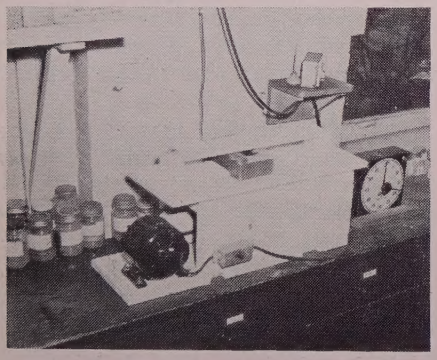
Professor Margaret Reid, instructor, seems to be just the person to increase the effectiveness of this study. She was formerly an instructor at Iowa State College, but received her education at the University of Manitoba, Canada; University of London, England; and the University of Chicago. Her alert mind certainly belies that of the traditional absent minded professor.

Professor Reid gives a bit of advice: "Now don't come into this course with the idea of learning about yourself. Its aim is rather to teach you about the general economic background in which the family plays its fundamental part."



Small paper sacks are best for collecting soil samples.

A soil technician filters the mixture of soil and solution.



A machine facilitates shaking the samples.

Soil Testing Laboratory Extends Services to Entire State

By Orville Sauder

No doubt you have heard over and over the value of testing soil before applying limestone, phosphate, or potash. But have you stopped to realize how important it is that test results be accurate and uniform so they really mean something?

That's where the college of agriculture's soil testing service comes in. Its laboratory, located in Davenport Hall, has first of all the task of making sure that you have available in any part of Illinois, accurate, dependable soil testing service.

Soil testing lab technicians in each laboratory in the state receive their training right here in Davenport Hall. Last year fifty-nine of them were trained for soil testing jobs.

That's not all, however. The service follows up this work by checking on the accuracy of its former trainees' work. At intervals each soil tester in the state sends to Urbana a set of eight check samples with the readings made on them.

These soil samples are carefully tested, and the results are compared with those sent in. Doubtful samples are retested for confirmation of results, and reports are mailed to the local testing labs.

Most reports show very good results; but in the event that they are unsatisfactory, an immediate effort is made to help find the source of the difficulties. In this way farmers can rely on the tests they get from any of the labs.

During the year 1948, 3,706 check samples were tested. There are seventy-seven county labs and several privately operated commercial concerns using this service of the University at present.

This laboratory also tests, for a slight charge, samples sent in by individuals in areas not maintaining a local lab. A great deal of soil is also tested for faculty and staff members for research purposes.

Soils are tested mainly for acidity, phosphorous, and potassium. For research samples and for special soils, as those from lawns and gardens, the pH test is used, which shows either relative acidity or relative alkalinity. Occasional tests for magnesium are also made.

In 1948, about 204,000 samples were tested by county labs for acidity and for phosphorus, and about 193,000 for potassium. The University soil testing service itself, ran a total of 44,179 tests, over half of this number being for potassium. In addition, 1,515 letters, consisting of reports and advice were written to laboratory technicians and farmers. Thus the University soil testing service serves the farmers of Illinois.

A. U. Thor, assistant professor of agronomy extension, directs the work. University students, employed for part-time work, do a large part of the actual testing, thus acquiring practical experience with the problems connected with soil testing and recommendations for treatment.

Left, in this room, adjacent to the main laboratory, soil samples are dried and pulverized. Right, a laboratory technician runs a test on soil samples in the main laboratory.

Is a pilot liable for damages done to farmers property when spraying crops?

In the Eyes of the Law

By Ken Goodrich

Who's at fault if the neighbor's dog bites Johnny? Who owns that good nut tree located right on the boundary line with the neighbor's farm? What happens if the hired man drives the tractor out on the highway straight in front of Jake's speeding bakery truck, and it knocks him straight into bed for a month? If the hired man was at fault, am I still liable because he was working for me? Or, to really go to extremes, who pays for my old cow if the pilot I hired to spray my weeds loses control of his plane and sends old Boss into bovine heaven?

What Does the Law Say?

Of course, there are a million and one things a fellow could ask about. There isn't a week that goes by without every one of us having a dozen or so legal questions pop up that make us wish we had a lawyer at our elbow or a set of law books tucked away for quick reference.

They can't all be answered here, but you can save yourself a lot of time and money if you know a little about a few of the more common problems.

To get back to Johnny's dog bite, if Johnny wasn't trespassing or provoking the neighbor's dog, the dog owner is liable for injury. This wouldn't have been true before June of last year, for up to that time peaceful dogs were legally allowed one bite before the law stepped in. But on June 30, the Illinois legislature passed the decision to make old Shep toe the line.

Illinois law provides a pretty fair decision in the case of trees on boundary lines. According to law you own an undivided interest in that nut tree, just as your neighbor does, but it doesn't give you the right to chop down your undivided half!

The hired man would probably have to pay for his own injuries in the truck-tractor accident. Illinois courts have in most cases decided if there is negligence on the part of the injured party, then farmer-employer cannot be liable. However, most farmers agree it's a good idea to carry liability insurance on their hired men not only to be safer themselves, but to help the hand out too. Incidentally, if you have another business on the farm, such as a sawmill, anyone employed there can hold the owner liable if he is injured, so says a decision made under the Workman's Compensation Act.

To get down to our last case about the pilot of the sprayer plane, you can consider yourself lucky that the Illinois legislature passed a pilot's insurance law last June, for otherwise old Boss would be a complete loss. The new law states that airplane operators must show proof of their financial responsibility in case of damage to property.

Interesting Legal Facts

Here are a few interesting legal facts that might come in handy sometime: You or your family can fish, hunt, or trap on the land you live on without obtaining a license providing you follow the legal season. A tenant can remove from his rented farm all temporary improvements (hog houses, temporary fences, or anything not fastened to the ground) that he has made, providing he does it while his lease is still in force and it is not stated otherwise in the lease. If a surveyor finds your fence line takes more land than it is supposed to, and the conditions have existed for twenty years, you are legally entitled to that land, complete the title.

Soil Professor, DeTurk Retires

By Charles Turner

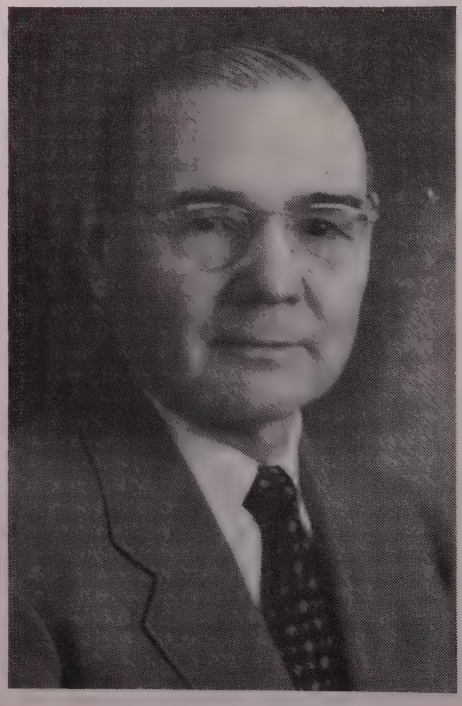
Dr. Ernest E. De Turk, professor of soil fertility, retired November 1 after serving thirty years with the agronomy department. His service to the department has been of great value and will be recognized as such in years to come.

Dr. De Turk was born on a farm near Martinsville, Indiana, in 1887. He was educated in the public schools of that vicinity and after his graduation from high school, he taught in the public schools near Martinsville.

In 1909, he entered Purdue University in the college of agriculture, receiving his B.S. in 1913. He then went to Penn State, where he taught chemistry, and received his M.S. in 1916.

In the summer of 1918, he came to the University of Illinois and obtained his Ph.D. in 1919. Then in 1920, he became head of the soil fertility division and received his full professorship in 1925, remaining in this capacity until his retirement this year.

Dr. De Turk was the author of a large number of bulletins and papers which appeared in scientific publications. These publications dealt with the chemical aspects of soil development,



DR. E. E. DeTURK

fertilizer use, and crop nutrition. These brought him not only national but international recognition.

After his retirement, Dr. De Turk will live on his farm near Decatur and enjoy the benefits of real farm life. This is a fitting climax to his brilliant and successful career as a member of the agronomy staff at the University.

German Agriculture . . .

(Continued, page 5)

of education which will enable any young person, regardless of the circumstances under which he is born, to rise to higher levels of employment and leadership.

In agricultural research and extension the traditional west German organization is very inefficient. Agricultural research is scattered in a large number of uncoordinated institutes, each too small for team-work between scientists, with different types of training. Because the institutes are so small they can hardly expect to have adequate library facilities or modern instruments such as electron microscopes, specialized X-ray machines, and statistical equipment.

Agricultural extension is largely in the hands of political ministries and has no direct connection with research. As a result, German farmers look with suspicion on agricultural scientists as a group. As stated before, the high yields of German field crops come more from thorough practice of traditional usage than from up-to-date knowledge on the part of the farmer. Production per worker is very low and so long as this remains true, standards of consumption will also be low. If each worker, by hard labor, produces only a little product, he will have only a little product to use or to trade to someone else for goods or service. This is the best answer to those who look upon the high acre yields of German field crops and conclude that she has little need for better research and extension.

Need to Understand Democracy

Finally, and this is more important than it seems on the surface, there is a tremendous need in Germany for a true understanding of democracy from the political and economic points of view. The young people of Germany have been misled and disillusioned so often that, typically, they are entirely unwilling to take an active part in politics of any kind. Broadly speaking, German people do not understand democracy at all. One of the college deans with whom I had extended conferences expressed his own concern because no political leadership has arisen which really challenges and interests the younger people.

The present West German government is very largely in the hands of the older established politicians and the Civil Service cliques. One of the great handicaps of Germany today is the lack of confidence in her own future. Some leadership needs to arise among the younger elements which will give the oncoming generation something to hope for.

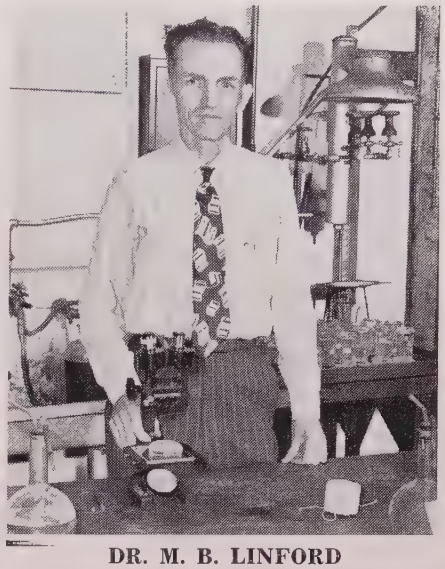
Ten weeks in Germany with the opportunity to travel widely, leaves a strong impression that there is much to appreciate and guard carefully in a country which, even partly, lives by the principles of democracy.

From Hawaii to Illinois

By Laurence Zuckerman

"It's a long way from Hawaii to the University of Illinois," said Dr. Maurice B. Linford, when we met in a crowded corner of the Vegetable Crops building. Here, surrounded by his library, Dr. Linford was busily working to acclimate his knowledge of nematodes (microscopic worms), gained in Hawaii, to the problems of Midwestern agriculture.

"Actually this is somewhat of a homecoming for me," said Dr. Linford. "I received my B.S. and M.S. degree at Utah State College at Logan. I received my Ph.D. at the University of Wisconsin and spent two years there working under a National Research Council Fellowship. That research resulted in the recognition of pursarium wilt in peas. Subsequently, resistant strains were developed which have caused the disease to become extinct in the cannery pea fields of the United States."



DR. M. B. LINFORD

Research in Hawaii

Dr. Linford spent the next twenty years in Hawaii doing research on tropical plant diseases for the Pineapple Research institute which works in affiliation with the University of Hawaii.

During his last twelve years in Hawaii, he specialized in diseases caused by nematodes.

He was contacted there by the late Dr. B. L. Wade, then head of the horticulture department of the University. After some correspondence Dr. Linford agreed to come here to do research and teach a graduate course dealing with plant diseases caused by nematodes.

This is a rather undeveloped field in the United States, as the only other school offering such a specialized course is the University of California at Berkeley.

Dr. Linford said, "While the nematode caused diseases have been studied more in milder climates and in greenhouses, there are some definite field problems in Midwestern agriculture caused by nematodes.

"Tobacco growers in Kentucky and Connecticut have had trouble with diseases caused by nematodes. There may be many more diseases of yet unknown origin which may be due to nematodes.

Dr. Linford expects to spend his time at the University doing research on diseases caused by nematodes and in the future may teach a graduate course.

An attractive farm layout such as this leads to good farm living.

Good Management

A Farmer's Invisible Resource

By Charles Marshall

Why is it that one farmer in the community year after year makes a high income, while his neighbor struggles along with subsistence earnings? When you look over the two farms, they seem equal. They have the same type of cropping system, soil, and livestock enterprise. The difference is in their management.

M. L. Mosher, farm management specialist in the College of Agriculture, has made a study of farm records kept for 32 years. In this study, he has found many examples of this large difference in earnings on farms which seem to have equal opportunities for a high income.

From 1925 to 1946 one north-central Illinois farm earned $110,000 more than another. Yet they were both about 320 acres, the same quality of land, in the same community, and farmed by men of the same age. Good management made an average difference of $5,000 each year.

Another example of the difference in income due to efficient management was shown by the following two 160-acre farms. They were equal in every way, but one farm earned $300 more net profit per acre in a 22 year period. The reason? Good management.

Mosher says, "The extra income on the top one-fifth farms over those of the lower one-fifth would pay for the farm in fifteen years." This is an astounding statement, but it has been proven again and again in such studies.

The meaning of the word management is not too clear. But, Mosher has outlined a Recipe for Good Farming which aids the farmer in finding the weakness in his farming program.

This recipe is broken down into ten main points: a sound land use and soil conservation program, good rotation and field arrangement, suitable kinds and amount of livestock, high crop yields, efficient livestock program, carefully planned use of labor, effective use of power and machinery, conservative buildings and fences, attention to prices of products sold, and a business large enough for good living.

The basis for a good farm program is a long time plan which includes Mosher's formula. Every enterprise should fit into the general scheme, aim toward a large net income, and still conserve resourses. Management is the invisible resource which makes the difference between a profitable farm and a subsistence farm.

Professor Mosher is now working on another study of Farm Bureau Farm Management Records. It will take a long time to find just what causes the difference in the income of similar farms, but we are coming closer to the answer.

Efficient management leads to good farming, and good farming leads to good living.

Illinois Representatives, National 4-H Congress

By Dorothy Giese

Four University students, Justine Ebert, Carol Harrison, Edith Bassler, and James Gill, were among the twenty-six Illinois 4-H members representing our state at National 4-H Club Congress. They met in Chicago from November 27 to December 1 with 4-H members from all parts of the United States and foreign countries.

Justine Ebert is from Valmeyer in Monroe County and is a sophomore majoring in home economics. She has been a 4-H member seven years.

Carol Harrison, from Ringwood in McHenry County, has been in club work seven years and has completed fifteen projects. She is a sophomore and also a home economics major.

Edith Bassler has been in club work seven years and a junior leader two years. She is from Mascoutah in St. Clair County and is a freshman home economics major.

James Gill is from Speer in Stark County and has completed twenty-one projects in five years of club work. He is a freshman majoring in general agriculture.

The other girls attending were Betty Dimond, Moultrie County; Jane Dodd, Saline County; Rachel Loehr, Macoupin County; Marilyn Marks, Bureau County; Joyce Mishler, Woodford County; Virginia Muntman, Morgan County; Norma Rader, Sangamon County; Betty Jo Vance, Edgar County; Carlene Wellman, Adams County; and Betty Winzeler, Tazwell County.

The other delegates from the agricultural clubs were Dwaine Dynes, Henry County; James Harris, Pulaski County; Russel Jorstad, Kendall County; Kenneth Koertner, Stephenson County; Donald Linneman, Cook County; Wayne Ryan, LaSalle County; Ronald Schlicht, Sangamon County; Maurice Soucie, Will County; Melvin Sparlin, Clay County; Dale Young, Shelby County; Byron Zehr, McClean County; and Kenneth Zobrist, Bond County.

Here members of the Illinois delegation to the national conference group together to have their picture snapped by Ed Gilbert. Ed was on the wrong side of the camera to be included in the picture.

Illini Attend National Rural Youth Conference

By Roberta Smith and Fred Kerr

Young people from twenty-five states, Canada, Germany, Sweden, Japan, and Korea—this might be a roll call of the delegation that attended R.Y.U.S.A. at Jackson's Mill, West Virginia, October 13-16, 1949.

Thirty-five delegates attended from Illinois. Eleven of these, students at the University of Illinois, are: Dorothy Baity, Mr. and Mrs. Ray Coffey, Rex Emory, Ed Gilbert, Joy Hughes, LaVerne Jennes, Fred Kerr, Roberta Smith, and Dick and Ralph Williams.

Jackson's Mill is located in a beautiful valley surrounded by the scenic hills of West Virginia. The permanent camp serves as both a state 4-H camp and as the meeting place of many state and nation-wide conferences. The lovely setting, the good living accommodations, plus that all important item, plenty of well prepared, wholesome food, did much to make the conference a success.

The conference theme, "Our Rural Heritage—Its Future?" was discussed throughout the three day session.

Robert Hoy, a rural minister from Ohio, was a most interesting panel discussion leader. Hoy told of his experiences in uniting Protestant churches of his community into an active group that worked and played together with true community spirit.

We worked with such leaders as Wilber Justi, director of youth activities of the National Grange; Benton P. Cummings, national field director, American Youth Hostels; and M. E. Johns, rural sociologist, Pennsylvania State College.

Songs, both old and new, were led by Norman Lindsey from the department of education, Toronto, Canada. Folk games and dances were led by Kirby Todd, director of rural recreation service, Ottawa, Illinois.

The fellowship with other young people from all over the world was a highlight of the conference. We danced with the girls from Canada and matched pennies with the Canadian fellows. We admired the cowboy boots of the Nebraska crew and opened our eyes at the publicity-minded South Dakota group who had travelled caravan style for 1,500 miles. We informed the Louisiana belles that there was no "nois" in Illinois.

Four farm exchange students told us how their countries compared with ours in farming, schools and other items of interest. We enjoyed knowing and talking to students so like us and yet with entirely different experiences.

Plans for next year's conference are already under way. At the business meeting, an Illini student, Dorothy Baity, was elected third vice president. Kirby Todd, of Ottawa, Illinois, was elected to the advisory committee. Other states represented in the executive group are Nebraska, Ohio, New York, and North Dakota.

A day is like a suitcase—you can get twice as much in it if you know how.

* * *

Why did the little moron burn a hole in the floor? He wanted to see the floor show.

Spotlight on . . . RURAL YOUTH

Is the Rural Youth group in your county doing anything new and interesting these days? Here's what some of the counties in the southern part of the state have been doing to round out their regular meetings and to add some spice to their recreation.

In February, 1948, six counties went together to organize a system whereby they could meet each month for recreation. Among the counties now attending are White, Edwards, Wabash, Lawrence, Crawford, Richland, Clay, and Wayne. In addition to having the regular monthly get-together, they would also have an annual banquet, a Thanksgiving dance, and another special meeting during the year. The central meeting place for the regular monthly meetings is Bridgeport.

There is no special organization of the group except an official secretary and treasurer. Recreation is led by a committee from two or three counties, with one taking a turn. The recreation consists of square dancing, along with a few polkas, scottisches, and social dances. Last year one of the highlights of the annual banquet was a hat show. Last month the group held a Harvest Moon dance.

We would like to hear what your county has been doing. Maybe your ideas will help others plan their programs. Address all mail to the Illinois Agriculturist, 326 Mumford Hall, Urbana—Attention R. Y. Reporters.

ILLINI OBSERVER MADAM JOLLY

She's a Walking Laboratory

By Laurence Zuckerman

Illini Observer Madam Jolly is a remarkable cow. She is the only Guernsey cow in the University herd who has had the inquisitive arms of interested students of dairy nutrition probing deep in her rumen.

Last spring Madam Jolly having outlived her productive life, was doomed to leave the University herd. Since the next stop after leaving the herd is usually the Champaign County Livestock Marketing association, the appearance of K. E. Harshbarger, professor of dairy production, with a last minute reprieve saved her. Harshbarger was considering investigations on the effect of various feeds upon the types and activities of bacteria in the rumen.

In order that a constant supply of rumen contents be available for microscopic study and culture expreiments, it was decided to perform a rumen fistula operation on Madam Jolly and use her as a walking laboratory for the duration of the experiment.

The first step in any investigation is to repeat the work and results of others who have delved into the field. Harshbarger attempted to do this with the assistance of Professors Warren and Nelson of the dairy bacteriology department. They were unable to obtain any conclusive confirmation and when the fall semester began they were forced by other pressing duties to postpone this phase of the study. However, Madam Jolly is not yet doomed to die. She is at present serving as a living model from which dairy production students can learn the shape, size, and action of the bovine rumen.

In the spring of 1949, Madam Jolly had her operation. In preparation for the operation, Dr. L. Boley of the college of veterinary medicine, shaved and disinfected a portion of her hide, in front of her left hip and below her loin. Next, spinal anaesthesis was injected to insure her immobility during the operation. When this had taken effect, an incision was made in the shaved area and the rumen wall was grasped and drawn out through the opening. A section of the rumen wall was doubled over and a tight clamp was placed at the base of the fold, stopping the circulation of blood through the folded portion of the rumen wall. After a few days had elapsed, the fold of rumen wall sloughed off leaving an opening into the rumen of Madam Jolly. A plug was fashioned, of wood, with rubber gaskets both inside and outside of the six inch opening, to prevent the loss of food, body heat, and the entrance of foreign material.

Today Madam Jolly is living a useful life at the University's round dairy barns, by standing peacefully while dairy science students probe her rumen with arms bare to the shoulder, getting the basic knowledge that may some day enable one of them to solve some of the multitudes of problems facing dairy science research men today.

Sound Sterilizes Milk

By Don Hunter

Soon you may be able to reach up and take a can or bottle of milk from the same shelf that you store canned vegetables. And it won't be evaporated canned milk either. This may be brought about by a sterilization process that uses instead of heat, ultrasonic waves.

The dairy industry has depended upon heat thus far to combat its arch enemy, bacteria. However, it is hoped that through the use of "noiseless" sound, bacteria can be destroyed completely in milk rather than be reduced to controllable numbers.

"Fine," you say, "this is all well and good, but how does this 'sound killer' work?" Most everyone is acquainted with the type of dog whistles that are inaudible to humans while Fido can hear them very well. They are pitched higher than the human ear is capable of hearing. They too are in a sense ultrasonic waves. However, the waves that are used in ultrasonic apparatus have a much higher frequency.

Surprising Effects Produced

When the frequency of these waves are held within certain bounds, they can produce surprising effects. Oil and water have been stabilized by ultrasonic waves, and use has been made of them in detecting flaws in metal castings. The dairy industry has made use of such waves, too, in the emulsification of cream, cheese, and in the homogenization of milk.

When these high frequency waves are set up in a fluid, there results a pumping action. This action is carried on at such a high velocity that the bacteria are torn to pieces, crushed to death, or killed by the peroxides caused by the radiation. Laboratory tests carried on by the dairy technology department have been 100 per cent successful in destroying certain bacteria in water and salt solutions. However, other species resisted the force.

Undesirable Effects

In milk, other problems arise. Milk proteins seem to interfere with the ultrasonic action. Then too, while the bacteria may be destroyed by the process, other effects, some undesirable, may be created, for instance, a change in the taste or composition of the milk.

These problems are being met here at the University, and with time and technical advancement, they will be solved.

What will sterile milk mean to you and I as both producer and consumer? It will mean low cost non-refrigeration storage and transportation. It will make possible prolonged storage periods that could aid in times of a surplus.

This adds up to better living for both the farmer and the milk consumer.

Why doesn't a train ever sit down? It has a tender behind.

Dr. H. S. Bryan, assistant professor of veterinary pathology is shown taking milk samples for the ring test.

New Method Reveals Bovine Brucellosis

By Russell Schnepper

The new ring test for bovine brucellosis, which was formerly known as Bang's disease, will soon be made available to veterinarians throughout the state, according to Dr. Graham, dean of the college of veterinary medicine.

This new test is a simple procedure as compared with the present blood serum agglutination test. This means more herds can be tested in a shorter time. Several months will be required to distribute the proper information about the new test to all concerned in the state, but by next summer the ring test should be in full swing, detecting brucellosis.

The ring test is made by mixing a small sample of the composite raw milk of the herd, collected either at the farm or the milk receiving plant, in a tube of test fluid. This fluid or antigen, is a suspension of brucella bacteria, germs that cause brucellosis, which have been killed and colored with a blue dye. If the herd is negative to the test the entire contents of the tube will remain blue, but if there is a single reactor in the herd the blue will go to the top of the tube forming a blue ring.

The principle is basically the same for both the ring test and the present blood serum agglutination test, but the latter involves more work. It requires a blood sample from each animal over six months old in the herd, making a serum from the blood, placing the serum in a tube with the antigen, and allowing it to incubate for several hours.

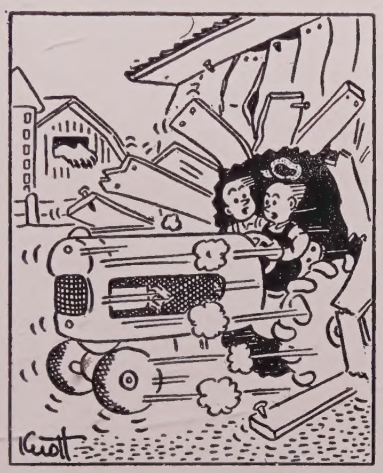
Dr. Graham states that on the average in Illinois there are five infected animals in every 95 cows. He estimates that by collecting milk at receiving stations and using the ring test, 300 to 600 herds may be tested daily.

After an infected herd has been located by the ring test, the infected individuals within the herd can be detected by either the ring test or the blood test.

The ring test has been used in Denmark and Germany with great success. The University has been experimenting with this test for two years and is now ready to turn it over to private veterinarians.

Both the ring test and the blood serum test are comparatively reliable. Neither is 100 per cent accurate where a single test is involved, but repeated tests prove satisfactory.

There usually is a delay from the time the cow is exposed until the time a positive reaction develops. This lapse in time is the incubation period and may vary from several days to six months or more. A single negative test does not mean that a cow is free from infection. It is this time lapse and the failure to repeat tests, together with occasional variations in test results, which sometimes cause farmers to doubt the reliability of the methods.



"Well, now we know what this lever does."

CURIOUS FLY,
VINEGAR JUG,
SLIPPERY EDGE,
PICKLED BUG.

Student Teachers Attend F.F.A. Convention

By Don Kaufman

Forty-three prospective F.F.A. advisors, accompanied by J. N. Weiss and Mr. Atherton of the agriculture education department, journeyed to Kansas City as guests of the National F.F.A. convention for its annual meeting. Enroute, we visited the agriculture departments of several high schools and observed the facilities and methods employed and used. The group also stopped at the University of Missouri where we met the agricultural education staff and several of the students for an informal discussion of common problems.

One of the highlights of the convention was the presentation of a state charter to the representatives from Rhode Island by the national organization; the addition of Rhode Island completing a full roster of the states belonging to the national organization. In addition to the states, the territories were also represented.

Entertainment was intermingled with the business and this was furnished in part by the F.F.A. band, ably conducted by Dr. H. S. Brunner of Pennsylvania State college, and the chorus directed by J. W. Hatch of the State Department of Education. The band and chorus were composed of members from each of the states.

The conducting of a large convention by a group of teen-age young men should be rated as one most important observation. The group used parliamentary procedure without any apparent effort and ran an orderly and business-like meeting.

One phase of the convention honored outstanding F.F.A. members in Farm Mechanics, Farm and Home Electrification, Soil and Water Management, and also the outstanding Dairy Farmers. These boys were not only honored in front of the group, but also received cash awards from the Future Farmers of America Foundation.

The state of Illinois had two chapters honored for outstanding work in F.F.A. The gold emblem chapters were Lanark and Fairbury.

Four members were picked from the four geographical divisions for the American Farmer award and one of this group was then chosen as the Star Farmer. Of additional interest was that of the four selected, two were married, and of the two, one is a father.

A public speaking contest was held. One member represented the territories, and one member each represented the four regions. Burton Bosch, of Chinook, Montana, was winner of this contest.

We were fortunate in meeting leaders in both agriculture and education. We met many F.F.A. advisors and state supervisors. Members of the college staffs from all parts of the country attended along with members of the press and radio. One of the supervisors from Washington, D. C., met with us and gave a short talk.

We were greatly impressed by the hospitality of our hosts and inspired by their achievements and accomplishments. We left with a confident feeling that the Future Farmer organization will increase its greatness and continue its beneficial influence in the world.

Illini Heads F.F.A.

George Lewis, freshman student in the college of agriculture, received the highest office that can be obtained in the Future Farmers of America, when he was elected president of the National Association at the annual convention held in Kansas City, Missouri.

George was reared on a farm near Hersman, Illinois, and has previously served as president of his local and state F.F.A. chapters. While George was president of the Mt. Sterling chapter, it was selected as the outstanding chapter in the state. He is a state and regional F.F.A. public speaking contest winner and placed fourth in the national speaking contest last year. He has received the Illinois Star State Farmer degree and was awarded the American Farm degree at this year's national convention.

We regret that George has left the Urbana campus but it was necessary for him to interrupt his studies here in order to assume the national office. His duties as national F.F.A. president will require him to attend as many state F.F.A. conventions as possible, as well as agricultural exhibitions and other meetings throughout the United States.

An Era of Progress

On September 1, Dr. Walter Lee Gaines, professor of milk production, a leader in his field, retired from the staff of the dairy science department of the University of Illinois.

For 41 years, Dr. Gaines has done research in dairy physiology which has resulted, among other things, in 45 published works.

In 1948, Dr. Gaines received the Borden award for his outstanding work in dairy production. The Borden award is a much coveted honor in this field. This award consists of a gold medal and $1,000 and is recognized as one of the top honors of the dairy world.

Dr. Gaines, a native of Crete, Illinois, received his bachelor of science degree from the University of Illinois in 1908 and in 1915 he received his doctorate from the University of Chicago.

Since 1915 he has been a member of the staff of the dairy science department at the University of Illinois.

Prime Beef—Where?

For years Sleeter Bull, professor of meats, has been telling his "Meats" and "Feeds and Feeding" classes about the great shortage of prime beef on the market.

Recently this lesson was brought home to the animal science department. It was planned to have an exhibit of cuts of the various grades of beef in conjunction with the Cattle Feeders Day which was held on October 21. Cuts of beef from a choice steer calf, a good steer, and a choice steer were readily available in Champaign-Urbana, but the acquisition of a prime rib was not so easily arranged.

Bull contacted packer representatives in Chicago, but as there was no prime beef on the Chicago market, they were unable to fill his order. He next contacted the packers at the National Stockyards in St. Louis but they were unable to supply any prime rib. Finally, in desperation he called the Omaha yards and at last his search was rewarded. Omaha agreed to ship one prime rib roast to arrive in time for the exhibit.

From this story, we must draw the conclusion that all of the prime beef which is sold in restaurants over the country just can't really be prime.

Somebody asked a jockey how his horse happened to win. "Well," he said, "I kept whispering in his ear, 'Roses are red, violets are blue, horses that lose are made into glue.'"

TO completely POWER THE FAMILY FARM

It is just as wasteful to over-power a job as to under-power it. Here's a low-cost way to have the *right size* tractor for the work to be done.

Every farm has jobs the Allis-Chalmers Model G Tractor will do better or at lower cost than any other kind of power. On many farms, the Model G solves every power need. With it you can have a line of quick-hitch, front-mounted implements that enable you to grow a wider choice of crops than with any other tractor.

If you now own a larger tractor, why tie it up with light jobs the Model G can do on quarts of fuel instead of gallons? During busy seasons, this extra power plant can prove "worth its weight in gold."

For Any Size or Type Farm

Actually, the rear-engine Model G is now used for all kinds of farm work—on all kinds of crops—on all sizes of farms.

In one general farming community, for example, more than 150 owners now use Model G Tractors. They mow with a field-weight, 5-foot mower . . . plant corn or cotton up to the capacity of any 2-row planter. On many farms, these two jobs alone—mowing and planting—more than justify investment in the tractor.

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TO BETTER LIVING
TO BETTER FARMING
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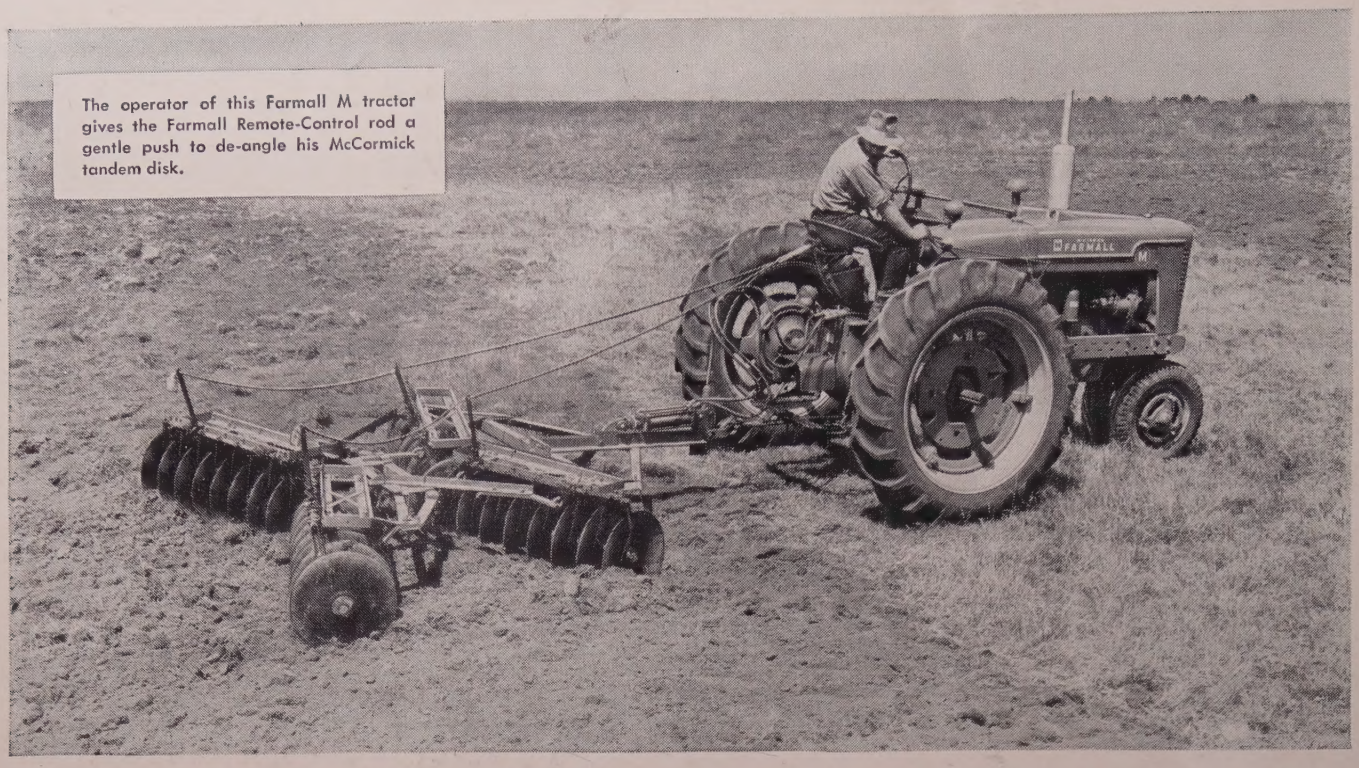


The operator of this Farmall M tractor gives the Farmall Remote-Control rod a gentle push to de-angle his McCormick tandem disk.

NEW!

Farmall Remote-Control of Pull-Behind Implements

Now you can raise, lower, and regulate pull-type implements hydraulically from the seat of your Farmall H, M, or MD tractor . . . with a light push or pull on a handy control rod.

Your Farmall H, M, or MD tractor can now be equipped with the new, hydraulic Farmall Remote-Control . . . to give you *fingertip* control . . . *positive,* two-way control . . . of drawbar-pulled implements.

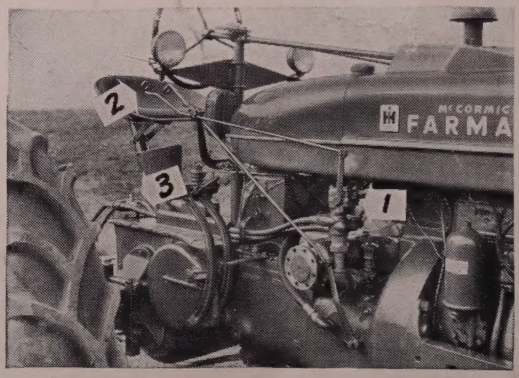
Faster Work. You can keep the tractor right up to speed while you raise, lower or regulate the implement. No need to slow down or stop. And if you're about to bog down in a wet spot, you merely push the control rod a little to partly raise the plow or de-angle the disk . . . and *keep on going.*

Better Work. You can adjust implements instantly for working depth, angle, or height of cut, to meet varying soil or crop conditions. You get quick, *positive* action that means straight edges at the ends of the field and on grassed waterways. You lower harvesting machines easily to pick up down grain or stalks.

Lower Costs. You cut both labor costs and fuel costs. And Farmall Remote-Control helps prevent damage to machines because it gives you *instant* lifting action to avoid obstructions.

You'll benefit from Farmall Remote-Control when using any make or model of pull-type machine (meeting ASAE standards) that needs raising, lowering, or regulating. And the same unit serves them all—plow, disk harrow, field cultivator, mower, harvesting machines, and many others.

See your IH dealer now for the full story about Farmall Remote-Control. Or write to International Harvester Company, Chicago 1, Ill.



Quickly and at moderate cost, your IH dealer can install Farmall Remote-Control for you. Shown here is (1) the valve that connects with the Farmall Lift-All pump, (2) the handy control lever, and (3) the breakaway coupling. Simply move the control rod to adjust the pull-behind implement.

Farmall Remote-Control is easy to set so that the action is always as much as you want, and no more. Simply lock the limit collar at the right point on the remote cylinder piston rod (above). It's quick and easy to remove the cylinder from one implement and attach it to another.

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See your IH dealer for IH 5-STAR SERVICE for all your farm machines . . . the year around.